

REMARKS

In the July 3, 2008 Office Action, claim 5 was objected to and claims 6-8 were rejected as failing to comply with the written description requirement and as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 1-13 stand rejected in view of prior art. Also, claims 1-7, 9, and 11-13 were rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 14, and 20 of U.S. Patent No. 7,357,002. No other objections or rejections were made in the Office Action.

Status of Claims and Amendments

In response to the July 3, 2008 Office Action, Applicants have amended claims 6 and 7 and cancelled claims 1-5 and 9-13 as indicated above. Thus, claims 6-8 are pending, with claim 6 being the only independent claim. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

Claim Objection

In numbered paragraph 1 of the Office Action, claim 5 was objected to because of informalities. In response, Applicants have cancelled claim 5, rendering this objection moot.

Claim Rejections - 35 U.S.C. §112

In numbered paragraphs 2-6 of the Office Action, claims 6-8 were rejected under 35 U.S.C. §112, first paragraph and second paragraph. In response, Applicants have amended claim 6 to clarify the arrangement of the gas separation apparatus and the separation membrane.

Specifically, claim 6 now recites that a gas separation apparatus is configured to connect the heat source side heat exchanger and the utilization side heat exchanger, the gas separation apparatus includes a separation membrane that is connected to the liquid side refrigerant circuit, the separation membrane is configured to separate from a refrigerant, and the gas separation apparatus is configured to discharge out of the liquid side refrigerant circuit a noncondensable gas remaining inside a refrigerant connecting pipe. Applicants believe that the claim now complies with 35 U.S.C. §112, first paragraph and second paragraph.

Withdrawal of the rejections is respectfully requested.

Rejections - 35 U.S.C. § 102

In numbered paragraphs 7-10 of the Office Action, claims 1-13 stand rejected under 35 U.S.C. §102(b) as being anticipated by Spauschus (U.S. Patent No. 4,417,451, hereinafter “Spauschus patent”). In response, Applicants have cancelled claims 1-5 and 9-13, and amended claims 6 and 7 to define the present invention over the prior art of record.

More specifically, independent claim 6 now recites a refrigeration apparatus that requires:

- *a heat source side heat exchanger;*
- *a utilization side heat exchanger;*
- *a four-way switching valve being configured to switch a direction of a refrigerant flow when changing between a cooling operation and a heating operation;*
- *a heat source side expansion valve being connected to the liquid side refrigerant circuit;*
- *a bridge circuit having a first check valve, a second check valve, a third check valve, and a fourth check valve,*
 - *the first check valve permitting only distribution of a refrigerant from the heat source side heat exchanger to the heat source side expansion valve,*
 - *the second check valve permitting only distribution of the refrigerant from the utilization side heat exchanger to the heat source side expansion valve,*
 - *the third check valve permitting only distribution of the refrigerant from the expansion valve to the utilization side heat exchanger,*
 - *the fourth check valve permitting only distribution of the refrigerant from the expansion valve to the heat source side heat exchanger; and*
- *a gas separation apparatus being configured to connect the heat source side heat exchanger and the utilization side heat exchanger,*
 - *the gas separation apparatus includes a separation membrane being connected to the liquid side refrigerant circuit, the gas separation apparatus being connected between an area where the first check valve and the second check valve are disposed and the expansion valve,*
 - *the separation membrane being configured to separate from the refrigerant and the gas separation apparatus being configured to discharge out of the liquid side refrigerant circuit a noncondensable gas remaining inside a refrigerant connecting pipe by operating a compressor and circulating the refrigerant inside the liquid side refrigerant circuit.*

Applicants respectfully assert that this structure is **not** disclosed or suggested by Spauschus or any other prior art of record.

In particular, Spauschus patent does **not** disclose or suggest a bridge circuit and that the bridge circuit constitutes four check valves as claimed by the current amendment. Further, Spauschus patent does **not** disclose or suggest the arrangement of a gas separation apparatus and those check valves.

It is well settled under U.S. patent law that for a reference to anticipate a claim, the reference must disclose each element of the claim within the reference. Therefore, Applicants respectfully submit that claim 6, as now amended, is not anticipated by the prior art of record.

Moreover, Applicants believe that the dependent claims 7 and 8 are also allowable over the prior art of record in that they depend from independent claim 6, and therefore are allowable for the reasons stated above. Also, the dependent claims 7 and 8 are further allowable because they include additional limitations. Thus, Applicants believe that since the prior art of record does not anticipate the independent claim 6, neither does the prior art anticipate the dependent claims.

Applicants respectfully request withdrawal of the rejections.

Double Patenting

In numbered paragraphs 11-18 of the Office Action, claims 1-7, 9, and 11-13 were rejected under the judicially created doctrine of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 14, and 20 of U.S. Patent No. 7,357,002 to Yoshimi et al. (hereinafter "Yoshimi patent"). In response, Applicants have cancelled claims 1-5 and 9-13 and amended claims 6 and 7 as mentioned above. Therefore, the double patenting rejection that is applied to claims 1-5 and 9-13 are moot and can only apply to claims 6 and 7.

More specifically, independent claims 6 now recites a refrigeration apparatus with:

- *a liquid side refrigerant circuit connecting the heat source side heat exchanger and the utilization side heat exchanger,*
- *a heat source side expansion valve being connected to the liquid side refrigerant circuit; and*
- *a bridge circuit having a first check valve, a second check valve, a third check valve, and a fourth check valve;*
 - *the first check valve permits only distribution of a refrigerant from the heat source side heat exchanger to the heat source side expansion valve,*

- *the second check valve permits only distribution of the refrigerant from the utilization side heat exchanger to the heat source side expansion valve,*
- *the third check valve permits only distribution of the refrigerant from the expansion valve to the utilization side heat exchanger,*
- *the fourth check valve permits only distribution of the refrigerant from the expansion valve to the heat source side heat exchanger,*

Since each of these elements is ***not*** disclosed or suggested by claim 4 of the Yoshimi patent, Applicants believe independent claim 6, as amended, is ***not*** obvious over claim 4 of the Yoshimi patent. Therefore, the double patenting rejection as applied to independent claim 6 is believed to be overcome.

Moreover, Applicant believes that dependent claim 7 is ***not*** obvious over claims 14 of Yoshimi patent in that they depend from independent claim 6. Applicant believes that since claim 4 of the Yoshimi patent does not render independent claim 6 obvious, neither do claim 7 of the Yoshimi patent render the dependent claims obvious. Therefore, the double patenting rejection as applied to dependent claim 7 is also believed to be overcome.

Withdrawal of the rejection is respectfully requested.

Appl. No. 10/560,621
Reply to Office Action of July 3, 2008
Amendment dated September 19, 2008

Conclusion

In view of the foregoing amendment and comments, Applicants respectfully assert that claims 6-8 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested.

Respectfully submitted,

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